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Published in:
Embodied Religion

Publication date:
2013

Document Version
Publisher's PDF, also known as Version of record

Link to publication in Tilburg University Research Portal

Citation for published version (APA):
Sarot, M. (2013). Christian Faith, Free Will and Neuroscience. In P. H. A. I. Jonkers, & M. Sarot (Eds.), *Embodied Religion* (pp. 105-120). (Ars Disputandi Supplement Series; No. 6). Igitur.

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Christian Faith, Free Will and Neuroscience

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ABSTRACT

In this contribution I explain what the libertarian conception of free will is, and why it is of moral and religious importance. Consequently, I defend this conception of free will against secular and religious charges. After that, I present and evaluate neuroscientific experiments on free will, especially Benjamin Libet's experiments. I argue that Libet's experiments do not decide the debate between compatibilist and incompatibilist conceptions of free will; that is a conceptual issue and not an empirical one. Nor do Libet's experiments count against the libertarian conception of free will that I defend, because they deal with arbitrary actions rather than actions that we do for a reason. I conclude by summing up the case for a libertarian conception of free will, giving attention especially to a religious reason for preferring this conception.

KEYWORDS

free will, libertarianism, compatibilism, incompatibilism, Benjamin Libet

INTRODUCTION

At the beginning of the 21st century, neuroscience is booming and in its wake, belief in free will is on the decline. In this contribution I will inquire (1) how free will and morality are connected and (2) how free will and Christian

faith are connected. Moreover, (3) I will give a brief survey of neuroscientific findings on free will. Consequently, (4) I will discuss the claim that Christian faith and/or morality are threatened by neuroscientific findings on free will. To what extent is this the case? In light of the complexity of the field, it is inevitable that I simplify some of the issues. If, however, I succeed in providing a conceptual map of the main issues, in demythologizing some contemporary myths and in indicating what are the main issues that deserve further discussion in the philosophy of religion, I will consider my mission for this contribution to be completed.

FREE WILL: INTRODUCTORY CONCEPTUAL EXPLORATIONS

A quarter of an hour ago, at 7:30 on 27 February 2012, I have begun to write down my paper for the ESPR conference 2012. Though the deadline for this paper has already elapsed and the second speaker of the ESPR session on neuroscience and free will is eagerly awaiting my first paper, I might have postponed the writing of the paper even further. I *decided*, however, that further postponement would be irresponsible and I started writing. Now let's step back and take a look at what I have just said. I have claimed that the fact that I started to write this paper did not just *happen* to me, was not the result of a chain of events inevitably leading to it (e.g., mail exchanges with Peter Jonkers and Aku Visala), but was the result of my decision. In my experience, it was I who took the decision; I am in charge and responsible, both for the fact that there is a delay and for the fact that there is to be no further delay. I am aware, of course, that external factors have influenced me. If I had not received reminders I would probably have given precedence to yet another paper. Nevertheless, the fact that I have begun today is the result of *my* decision.

This is, I submit, what is involved in a common sense view of free will. Note that the word 'will' does not appear in this account. It is not needed. The point is that ordinarily, *I* take my decisions and commit my actions. I just added *ordinarily*, because most people would claim that this is the default position, but would have no problem in admitting that there would be exceptions. Under the influence of alcohol, for instance, people apparently do things that they would ordinarily not have done: Alcohol reduces our control. That is one of the reasons why we should control our consumption of alcohol. Medicine may have a similar effect – even though we may not be aware

of that when taking it – and so may some psychological conditions. These exceptions do not endanger the default position that *I am in control*. Moreover, most people would readily admit that even under ordinary circumstances, they do not control themselves entirely. Our actions are rooted in a bodily basis, a physiological pattern that is given to us, perpetuating itself automatically. This stable pattern of bodily activity – heart beat, respiration, blood circulation – may be under our control to a very limited extent only (if I stop these processes, that is the end of my career as an agent), but that is not considered as threatening my control. As Thomas F. Tracy has argued, 'this stable pattern of bodily activity provides the foundation for the life of an *agent* because it permits a margin of intentional variation.' [1] In other words, our actions are rooted in a bodily substrate that is to a large extent given to us; this does not threaten our being agents but enable it, as long as we are able to control our body to some extent. The more control, the more freedom to act. That is why we take trouble to increase the control of our bodies (whether it is in learning to walk or in learning to play the piano): it increases our range of actions.

The above may be summarized as follows: freedom is always freedom *of*, freedom *to* and freedom *from*, and freedom involves *control*. *Freedom of*: A free act is not an arbitrary act; it is the act *of someone*. My action is explained by *me*, by *my decision*. In many cases those who know me can to a certain extent predict me. *Freedom to*: It is the freedom to start writing a paper or to delay that start; more generally, it is the ability to do something or to abstain from it. *Freedom from*: Freedom is always freedom *from* compulsion: when I am free, the causal antecedents of my action do not make that action inevitable. *Control*: If the agent does not control the action, but the action is random, it is not free. *Absolute freedom*, then, does not exist.

In our daily lives, we consider freedom to be important. Why? *On a secular level*, I think, because we see freedom as a necessary condition for responsibility: No responsibility without control. If an agent does not act freely, she cannot be held responsible for her actions. In other words, persons who are not free from compulsion or who did not have alternatives, cannot be held responsible. This also means that our legal system is based on the assumption that in principle, people are free. To the extent that they are not, they are in a state of diminished responsibility and qualify for reduction of

[1] Thomas F. Tracy, *God, Action and Embodiment* (Grand Rapids, MI: Eerdmans, 1984), 104.

sentence. Freedom is important in other domains of life as well. Our whole way of thinking about love and friendship assumes that we are free to chose with whom we will have these relationships. The fact that a person freely chooses me for a friend is one of the things that makes his friendship valuable for me. And the fact that I am free to return his friendship or not is one of the things that make my positive response valuable to him. Moreover, one of the most influential ideals in contemporary society, that of autonomy, presupposes that we are free. We can be autonomous only to the extent that our actions are truly our own and are not caused by factors outside our control, i.e., in so far as we are free. The same applies to the political ideal of democracy: people are allowed to choose their own government on the presupposition that when they choose, this choice is *their choice*, so that the resulting government expresses *the will of the people*.

On a religious level, freedom and responsibility are not less important. Theists generally think that it matters what we believe and that it matters that we live according to our beliefs. They may even think that our final destiny depends upon it. Now if that is the case, we must again be responsible and therefore free. Even those who do not think that our final destiny depends upon the decisions we make during our lives, however, will often argue that it is of paramount importance that we return the love of God and that we love our neighbors. And here again, love requires freedom. Moreover, free will may – but need not – play a role in various contexts in theology and philosophy of religion, for example in a free will defence, an attempt to reconcile the existence of evil with the existence of a good, omnipotent and omniscient God by arguing that evil is due to human free actions for which God cannot be held responsible.

FURTHER CONCEPTUAL EXPLORATIONS: THREATS TO BELIEF IN FREE WILL[2]

Free will may be important, but there are a number of reasons not to believe that we actually have free will. These reasons again fall apart into two groups: secular reasons and religious reasons.

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[2] For the philosophical distinctions introduced in this section see current introductions to free will like Joseph Keim Campbell, *Free Will* (Cambridge: Polity Press, 2011); T.J. Mawson, *Free Will: A Guide for the Perplexed* (London: Continuum, 2011); Ted Honderich (ed.), The Determinism and Freedom Philosophy Website, http://www.ucl.ac.uk/~uctytho/dfwIntroIndex.htm (visited 5 May 2012).

Secular reasons for not believing in free will are motivated by science. Science seeks to explain things, and in the course of doing so it lays bare causal sequences: chains of cause and effect. It is useful to be aware here of the fact that causal explanation hardly ever involves single causes: mostly, it is a causal condition rather than a single cause that explains an effect. If I turn the light switch, that may be called the cause of the room becoming illuminated; nevertheless, the room would still in darkness if the Electricity Company would not supply electricity, if my wife would not have paid the bills, etc. etc. A full causal explanation is almost always complicate rather than simple. A full causal complication, moreover, does not only include causes, but also the causes of these causes etc. In principle, for each cause science may legitimately ask for the cause of that. It is here that a tension with belief in free will emerges, for as we have just seen, this belief supposes that the explanation of free actions has an end in the person who acts, or in that person's free will. If I claim that I did a certain action, I do not claim my act of will is a full explanation for that action; circumstances like those just mentioned (e.g., there being electricity) will invariably figure in full explanations of my actions. But I do claim that my choice is not explained by a chain of cause and effect that stretches back for an indefinite time: It was I who made the choice or committed the action, and if this is merely an appropriation of a particular part of a chain of causes and effects that in no way differs from other chains of cause and effect like those determining the weather or the orbits of the planets, it becomes meaningless to claim that my act is a free act.

This comes down to the claim that free will and determinism are incompatible, a claim that I would like to defend. I defend indeterminism with respect to human choices and actions, therefore; I do not take position here with respect to the choice between determinism and indeterminism in a more general or cosmic way. Indeterminism with respect to human choices and actions is compatible both with cosmic determinism and cosmic indeterminism, I submit.[3] It is important to note, however, that in the philosophical literature on free will and determinism another position is frequently defended: Simultaneous acceptance of determinism and free will, made possible by a revised, more limited definition of free will. Because this view of free will

[3] In that case, of course, cosmic determinism becomes determinism with an exception: Free will. From now on, I will use '(in)determinism' in the limited sense of (in)determinism with respect to human choices and actions only, not in the wider sense of cosmic (in)determinism.

is compatible with determinism, it is called the compatibilist view of free will. *Compatibilists* assert that if an action is voluntary in the sense that we are not compelled to do it against our will, that action is free. Most philosophers would admit that determinism leaves room for actions that are free in this sense: Determinism asserts that insofar as we have a will, that will is the effect of a causal sequence (genetic factors and environmental factors) as well, but it does not assert that our actions take place against that will. For these philosophers, this compatibilist form of free will is sufficient for responsibility. For them, I would say, appropriation of the action is more important than control or origination (in the sense of having done the action while being able not to do the action).

The opposite of compatibilism is *incompatibilism*; incompatibilists defend *libertarian free will*, that is to say they defend that if a person freely commits an action, this person should have been able to act otherwise as well. Mere identification with an action is insufficient for full responsibility, incompatibilists hold. We generally hold that this applies to other persons' actions: identifying with someone else's terrorist attack is morally repugnant, but does not bring full moral and legal responsibility for that attack with it. Incompatibilists hold that this also applies to one's own actions: if one could not avoid one's own actions because these are fully causally determined, identification with or appropriation of these actions does not suffice to make one fully morally and legally responsible. I am not going to argue in full for this view here. I suggest, however, that most compatibilists will to a certain extent share my intuition with respect to identification being insufficient for responsibility; the reason they nevertheless reject a libertarian view of free will is that they judge that it is either indefensible in light of the findings of science, or has never yet been articulated in a philosophically acceptable way. By confronting some of the scientific findings that are the most difficult to accommodate within a libertarian view of free will, those of the Libet experiments, later on in this paper, I hope to take away at least part of their objections to libertarian free will.

Religious reasons for not believing in free will are motivated by the Christian understanding of either God's foreknowledge, providence or predestination. *Providence* and predestination, if they are well understood, constitute no problems for free will, I submit. When we say that God is provident, we say that God guides nature, history and individual lives in accordance with God's goals. If we are determinists as outlined above, we may believe that God can fully determine nature, history and individual lives; if we

are not, we can interpret God's providence in terms of a salvific influence that in no way hinders free will. *Predestination* is about one's eternal destiny rather than about one's free choices; this doctrine wants to assert that human salvation is entirely dependent upon God, not upon human choice. Contrary to what is often thought, even the strictest form of predestination, double predestination, is compatible with libertarian free will. Predestinatarian theologies do assert that there are limits to free will, of course: one cannot will oneself to salvation. That there are limits to free will, however, is a general given of experience: I cannot by the exertion of free will jump to the moon or become a marathon champion either, because the first is impossible and the second is impossible for me, given my lack of talents in this field.

Foreknowledge is a different cup of tea, I think, because the assertion of full foreknowledge does create problems for libertarian free will. If God knows all free acts in advance, these acts are determined when God knows them and the actors lack the ability to act otherwise. For determinists this is not a problem; it is merely another argument against libertarian free will. Incompatibilists like myself have two options available. Firstly, they may – with Augustine and Boethius – assert that God does not exist in time but eternally, which means that He lacks temporal location and extension. Foreknowledge is then no longer *fore*knowledge; God does not know in time. Ingenious attempts have been made to show how eternal existence can yield omniscience with respect to temporal events and (free) actions even if determinism is not true.[4] Personally, I don't believe that these attempts work; as soon as one uncovers their hidden inconsistencies, a hidden determinism is uncovered as well.[5] That is why I opt for another possibility: God has limited knowledge of the future only: 'It is logically impossible for God to know with certainty the future choices to be made by free persons. This should not be seen as a denial of omniscience, any more than it is a denial of omnipotence that God cannot perform actions that are logically impossible.'[6]

Though there is a tension between divine foreknowledge and libertarian free will, then, there is no need to resolve this tension in such a way that lib-

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[4] Eleonore Stump & Norman Kretzmann, 'Eternity,' *The Journal of Philosophy* 78/8 (August 1981), 429–458, reprinted in: Thomas V. Morris (ed.), *The Concept of God* (Oxford: OUP, 1987), 219–252.

[5] Marcel Sarot, 'Omniscient and Eternal God,' in: M. Wisse, M. Sarot & W. Otten (eds.), *Scholasticism Reformed: Essays in Honour of Willem J. van Asselt* (Leiden: Brill, 2010), 280-302.

[6] William Hasker, 'Analytic Philosophy of Religion,' in: William J. Wainwright (ed.), *The Oxford Handbook of Philosophy of Religion* (Oxford: OUP, 2005), 421–446, quot. 437.

ertarian free will is denied. Since I have argued above that libertarian free will is important to theism, the upshot of the religious considerations concerning libertarian free will seems to be in favour of it. It seems that the findings of science are a more serious problem for those who want to ascribe libertarian free will to human beings than the beliefs of Christendom. Let us now turn, therefore, to the findings of science, and more specifically to those of Benjamin Libet.

BENJAMIN LIBET'S EXPERIMENTS ON FREE WILL

Benjamin Libet's experiments on free will did not come out of the blue. In these experiments, he built on earlier experiments that suggested that conscious awareness of certain brain processes was delayed by 500 milliseconds, and that people in hindsight often think that their conscious experiences took place at an earlier moment than they in fact did ('backward referral').[7] In the most famous experiment in which Libet brings empirical evidence to bear on the question whether we have free will,[8] he starts from the fact that if people perform self-initiated voluntary acts, like a quick flexion of the fingers or wrist, a DC system with an active electrode on the scalp can measure a slow electrical change at the vertex that precedes the actual movement by up to 1 second or more. This electrical change is called the readiness potential (RP). In other words, approximately a second elapses between the first perceptible brain change (RP) and the actual movement. Libet knew, as we all know, that our conscious decision to move precedes our movements. He doubted, however, whether the time between conscious decision and actual movement is as long as a second. If the time was smaller, that would mean that brain changes leading to the movement were beginning before the conscious decision was made. In order to ascertain whether this really is the case, he devised an ingenious clock, an oscilloscope timer, which has a dot that moves at approximately 25 times the speed of the

[7] On these experiments, see Adina L. Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' in: Walter Sinnott-Armstrong & Lynn Nadel (eds.), *Conscious Will and Responsibility: A Tribute to Benjamin Libet* (Oxford: OUP, 2011), 11–14.

[8] Libet began to publish about these experiments in the early 1980s. For an elegant and famous summary of his findings, see Benjamin Libet, 'Do We Have Free Will?', *Journal of Consciousness Studies* 6/8–9 (1999), 47–57; reprinted in Robert Kane (ed.), *The Oxford Handbook of Free Will* (Oxford: OUP, 2002), 551–564 and in Sinnott-Armstrong & Nadel (eds.), *Conscious Will*, 1–10.

sweep-second hand of an ordinary clock. The 'seconds' at the dial of this clock were equivalent to about 40 milliseconds. Experiments show that subjects using such a clock can report the actual time at which a weak electrical stimulus was delivered to their skins with an error of only -50 milliseconds. When Libet asked subjects to indicate the moment of their actual conscious decision at this clock, he found that RP started 550 milliseconds before the act, human subjects became aware of the intention to act 350–400 msec after RP and 200 msec before the actual motor act. Even admitting an error of -50msec, this would still place the conscious decision firmly after the RP.

Many scholars conclude from Libet's experiments to free will scepticism, so much so that Benjamin Libet, Anthony Freeman and Keith Sutherland write that

> Much of the contemporary case for the illusory nature of free will is derived from the experimental work of Libet and his colleagues[9]

and Tim Bayne calls

> Libet's studies concerning the neural basis of human agency … the most influential rebutting [of free will – MS] objection in the current literature.[10]

Libet's alleged objection is reinforced by more recent experiments, that suggest that we can view the process leading to free acts begin up to ten seconds before the act.[11] Thus, the indications that free will – if we may continue to call the process through which we make our decisions thus – is rooted in brain processes that precede (and partly elude) consciousness, become stronger and stronger. On the other hand, as John Searle has noted, 'This experience of free will is very compelling, and even those of us who think it is

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[9] Benjamin Libet, Anthony Freeman & Keith Sutherland, 'Editor's Introduction: The Volitional Brain,' *Journal of Consciousness Studies* 6/8–9 (1999), ix–xxiii, xvi.

[10] Tim Bayne, 'Libet and the Case for Free Will Scepticism,' in: Richard Swinburne (ed.), *Free Will and Modern Science* (Oxford: OUP: 2011), 25–46, 26. Free will scepticists who appeal to Libet include Gerhard Roth, *Das Gehirn und seine Wirklichkeit: Kognitive Neurobiologie und ihre philosophischen Konsequenzen* (Frankfurt: Suhrkamp, 1994); Sean A. Spence, 'Free Will in the Light of Neuropsychiatry,' *Philosophy, Psychiatry, & Psychology* 3/2 (1996), 75–90; Dick Swaab, *Wij zijn ons brein: Van baarmoeder tot alzheimer* (Amsterdam: Contact, [5]2010); Daniel Wegner, *The Illusion of Conscious Will* (Cambridge, MA: MIT Press, 2002).

[11] See Chun Siong Soon, Marcel Brass, Hans-Jochen Heinze & John-Dylan Haynes, 'Unconscious Determinants of Free Decisions in the Human Brain,' *Nature Neuroscience* 11 (2008), 543–545.

an illusion find that we cannot in practice act on the presupposition that it is an illusion.'[12]

Libet himself is a clear example of this. He concludes from his experiment:

> The volitional process is therefore *initiated* unconsciously. But the conscious function could still control the outcome; it can veto the act. Free will is therefore not excluded. These findings put constraints on views of how free will may operate; it would not initiate a voluntary act, but it could *control* performance of the act.[13]

In other words, Libet suggests that free will is not nonexistent, but operates in a different way: it does not generate our decisions but controls them. If it wants to, free will interrupts the process leading to our acts and thereby prevents them. If it endorses the act, free will gives in to the process leading to it. In the literature this is sometimes characterized as freedom of won't rather than freedom of will.[14]

There's a host of technical questions that could be asked about the reliability of Libet's experiments. Libet may have been the first to engage in significant empirical research on free will, but novel research designs are prone to contain errors that have to be corrected by later generations of researchers. There's the technical question, for example, if subjects who are required to divide their attention between their own action and position of the clock face are not likely to make errors in temporal order judgements.[15] There's the not less technical, but crucial question whether RP reflects processes involved in initiating a movement or in forming a conscious intention.[16] Since we are often unaware of our intentions (e.g., I am aware of driving, steering, accelerating, changing gear, etc. but not of the *intentions* to do all these things), becoming conscious of the intention (as required in Libet's experiments) may often temporally follow the intention itself – even though we

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[12] John Searle, 'Free Will as a Problem in Neurobiology,' *Philosophy* 76 (2001), 491–514, quot. 494.

[13] Libet, 'Do We Have Free Will?', 47.

[14] Alan L. Mittleman, *A Short History of Jewish Ethics: Conduct and Character in the Context of Covenant* (Oxford: Wiley-Blackwell, 2012), 36; Sukhvinder S. Obhi & Patrick Haggard, 'Free Will and Free Won't,' *American Scientist* 92 (2004), 358–365.

[15] Bayne, 'Libet and the Case for Free Will Scepticism,' 27; Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' 20; T.J. Mawson, *Free Will: A Guide for the Perplexed* (London: Continuum, 2011), 129.

[16] Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' 15–16.

would ordinarily call the intention itself a 'conscious intention.' If that is the case, we can ask: Is Libet measuring the interval between conscious intention and movement, or between consciousness of conscious intention and movement?[17] While all of these questions on Libet's experiments can be seen as throwing doubt on his results and thus supporting libertarian free will, some empirical questions go in the opposite direction. For example, if brain processes precede our conscious decision to act, is it not likely that brain processes also precede our conscious processes to veto an act? In what sense do we have 'free won't,' then?[18] I abstain from an in-depth discussion of these questions for three reasons. (1) Scientists themselves have not come to definitive decisions on these. (2) As long as scientists disagree, philosophers cannot do much more than pick and choose, and that with less authority than a scientist making such a choice would have. (3) We don't need answers to all of these questions for our purposes.

The main reason why we don't need these answers is that the type of actions that is studied in Libet's experiments and the like, is neither morally nor religiously relevant. Spontaneously generated simple motor movements that have no real consequences do qualify as free acts for those who believe in free acts; there is no question about that. Nor is it difficult to understand why Libet studies this type of movements: In order to shed experimental light on the genesis of free actions, Libet focuses on the simplest examples. The whimsical movements that he studies, however, are hardly meaningful examples of free agency. It is not even clear that Libet studies the relation between the *intention* to act and *the act itself*. The subjects in Libet's experiments are in fact invited to adopt a certain mental set, namely *move wrist at random moment*. The decision they have to make after this is not *whether* to move, but *when* to. And there are no reasons that govern this decision.[19]

It is not with pointless movements that religion and morality are concerned. They are concerned, rather, with our ability to act *for a reason*, and for a reason that *we* consider good. They are concerned with acts that are rooted in our deepest convictions and are the result of conscious deliberation. It is not clear that Libet-experiments shed any light on these. Adina Roskies concludes:

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[17] Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' 20–22.

[18] Marcel Brass & Patrick Haggard, 'To Do or Not to Do: The Neural Signature of Self-Control,' *The Journal of Neuroscience* 27(34) (22 August 2007), 9141–9145.

[19] Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' 18–19.

> Arbitrary action is, at best, a degenerate case of freedom of the will. ... Suppose ... that it turned out that in purely arbitrary cases in the absence of reasons (including foreseeable consequences of those actions), actions were the results of random fluctuations in the nervous system, and suppose further that in all cases in which there are reasons relevant to the decision to act, we responded appropriately to these reasons, deliberating and weighing them, and then regulating our actions so as to bring them in line with our deliberations. Would we conclude on the basis of the random mechanisms that caused actions in cases where our actions had no consequences that we lacked freedom?[20]

The answer is, of course: No. If this is how things stand, in the cases that matter we do have the relevant form of freedom. Consider the following example: While dusk is beginning to fall, a couple is taking a stroll in the forest near their home. Towards the end of their walk, one of them believes that she has heard a women crying. They stand still and listen together, briefly discuss what might be the case and then run together into the direction from which the voice is coming. Up to then, their walk did not have a moral significance; even if their route had been the result of random fluctuations in their nervous systems, that is hardly relevant to the question whether they really have free will. The decision they make when they hear the cries, however, is morally relevant; and it *this* decision turned out to be the result of random fluctuations rather than conscious deliberations, this would be very relevant to the question whether they have free will. On this type of decisions, however, Libet-type experiments do not shed much light.

THE LIMITS OF EMPIRICAL RESEARCH ON FREE WILL

Benjamin Libet is perhaps the most prominent among those who bring empirical research to bear on questions of free will, but he is certainly not the only one: Robert Kane, Daniel Dennett and Daniel Wegner should be mentioned here as well.[21] The reason that I don't analyse their views here is that the above discussion of Libet's experiments suffices to give us some insight

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[20] Roskies, 'Why Libet's Studies Don't Pose a Threat to Free Will,' 18. Similar points are made in: Bayne, 'Libet and the Case for Free Will Scepticism,' 28–31; Mawson, *Free Will*, 132–133.

[21] Daniel C. Dennett, *Freedom Evolves* (New York: Viking, 2003); Robert R. Kane, *The Significance of Free Will* (Oxford: OUP, 1996); Kane, 'Responsibility, Luck and Chance,' *Journal of Philosophy* 96 (1999), 217–240; Wegner, *The Illusion of Conscious Will*. Cf. Stephen Hawking & Leonard Mlodinow, *The Grand Design* (New York: Bantam Books, 2010), 32.

into both the value and the limits of empirical research on free will. Discussion of more scholars and their positions would in this respect yield no new insights.

We have seen that empirical research sheds some light on the question to what extent acts that in ordinary life we would call 'free' are causally determined by processes other than conscious decisions. I write 'some light' because we have seen that Libet's research concerns only a limited class of free actions – random and pointless bodily movements – and not the type of free actions that we would ordinarily consider of paramount importance: acts of moral or religious significance that are preceded by serious conscious deliberation. The current limitations of empirical research into free will, however, are not limitations of principle but of practice. This type of research is still in its infancy and we have good reason to suppose that in the long run it will provide fuller and more reliable data about Libet-type of actions and, moreover, will provide data about more central examples of exertion of the free will as well. It may well be the case, then, that in the long run the issue of determinism versus indeterminism will be empirically decidable.

This, however, does not apply to the issue of compatibilism versus incompatibilism. The issue that is at stake here is not to what extent our actions are in fact determined, but under which circumstances we are prepared to call an action free (and blame of praise a person for it) and under which circumstances not. That's an issue on which we have to make up our minds on philosophical grounds and that cannot be decided by empirical research. Empirical research should settle the question to what extent our actions are determined; philosophy should help us settle whether we should call our actions free.[22]

We have seen above that absence of coercion is insufficient for incompatibilists. Incompatibilists assert that an action is free only if the actor might have acted otherwise if s/he had wanted to. In other words, incompatibilists assert that an action is free if and only if (1) it is at least partly explained by a conscious decision of the actor, (2) the actor was capable of deciding other-

[22] This also means that *if* one accepts determinism, it is up to philosophy and not to empirical research to decide whether this should be soft determinism (determinism accepting a compatibilist form of free will) or hard determinism (determinism rejecting the reality of free will). See on these issues Peter W. Ross, 'Empirical Constraints on the Problem of Free Will,' in: Susan Pockett, William P. Banks & Shaun Gallagher (eds.), *Does Consciousness Cause Behaviour?* (Cambridge, MA: Mit Press, 2006), 125–144.

wise, so that the action in question would not have taken place, and (3) the decision of will itself cannot restlessly be explained from its causal antecedents. Incompatibilists therefore assume that free agency requires conscious states to be causally efficacious in producing an action in a way that cannot be restlessly explained in terms of genetics, environment, etc. Whether this is *really* required for free agency is a conceptual question to be discussed in philosophy; whether this type of freedom actually obtains in our world, is an empirical question to be settled by science.

Given the current scientific state of affairs, where does this bring us? Firstly, above I have distinguished between cosmic determinism and determinism with respect to human will. On the standard interpretation of quantum mechanics, cosmic determinism has been proven false, with quantum indeterminacy as the exception.[23] Secondly, quantum indeterminacy does not suffice to prove that we have libertarian free will. It is not clear that quantum determinacy leads to indeterminacy at the level of phenomena that are observable with the naked eye, while that is the level at which we would like our free will to have effect.[24] Moreover, even if higher level indeterminacy could be proven, that could be explained by chance rather than by volitional control. The fact that there is an exception to cosmic determinism does undermine determinism, however. Thirdly, as I have shown in my discussion of Libet's experiments, science is still a long way off from proving key examples of libertarian free will an illusion. In the absence of decisive scientific evidence, other considerations should guide our decision on the issue of free will. Fourthly, one such consideration may be introspection, which – in the absence of scientific evidence to the contrary – provides a 'very compelling' argument in favour of libertarian free will. Fifthly, a second such consideration is provided by the conceptual link between moral responsibility and libertarian free will. Until now, no convincing example has been given in which we would without hesitation hold someone without libertarian free will responsible for her actions.

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[23] Ross, 'Empirical Constraints,' 129.

[24] Huw Owen, 'Providence and Science,' in: Maurice Wiles (ed.), *Providence* (London: SPCK, 1969), 77–87, 84; Mats J. Hansson, *Understanding an Act of God: An Essay in Philosophical Theology* (Uppsala: Acta Universitatis Upsaliensis, 1991), 99. In another way Stephen Hawking also argues that quantum physics does not lead us away from determinism: Hawking & Mlodinow, *Grand Design*, 72.

FINAL CONSIDERATION

Those who reject libertarian free will mostly do so because of scientific reasons: they believe that science rules out the possibility that conscious decisions that are themselves at least partly independent of (material) causal antecedents, decide our courses of action. However, while it is true that science has not proven that conscious decisions are causal factors, it cannot rule them out either. And while it is true that on scientific grounds one cannot rule out the possibility that conscious decisions are epiphenomena of other conditions that can be studied empirically, one cannot prove them to be so either. Empirically, it is impossible to prove that consciousness is always and under all circumstances consciousness *of* a body and *originated by* that body. Moreover, for those who believe in a conscious God or other supernatural conscious beings, this seems a very unpromising position to adopt. For it would imply that God could be no more than a function of this world (*aliquid mundi*)[25], that He could in no way act or know or be independently of the world, and that He could neither begin to exist before creation began to exist, nor continue to exist after creation had stopped to exist. Therefore it seems that those philosophers of religion who defend the existence of a God who exists independently of the world, have good reason to defend the existence of libertarian free will as well.

We have seen above that both morality and theism seem to require libertarian free will. Contrary to what is often thought, neuroscientific experiments on free will like those of Benjamin Libet give us little reason to reject the idea that human beings have libertarian free will. Therefore these findings do not undermine morality and religion either.

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[25] Austin Farrer, *Reflective Faith: Essays in Philosophical Theology* (London: SPCK, 1972), 186.